

PAC Project 9.1 Release Notes

Welcome to PAC Project 9.1

Welcome to version 9.1 of Opto 22's PAC Project™ software suite for industrial automation, remote monitoring, and data acquisition applications.

PAC Project comes in two forms: PAC Project Basic and PAC Project Professional.

PAC Project Basic

PAC Project Basic is included in your purchase of a SNAP PAC controller and can also be freely downloaded from our website, www.opto22.com. PAC Project Basic is all you need for most monitoring and control needs. It includes the following software applications:

- **PAC Control™** for developing control programs (*strategies*) to automate processes, monitor equipment, and acquire data from processes and equipment
- **PAC Display™** for creating HMIs (human-machine interfaces) for technicians and operators to use
- **PAC Manager™** for configuring hardware and troubleshooting
- **EtherNet/IP Configurator** for setting up EtherNet/IP messaging between an Allen-Bradley® Logix™ controller and Opto 22's SNAP PAC I/O

PAC Project Professional

PAC Project Professional is designed for more complex projects, especially those requiring OLE for Process Control (OPC), database connectivity, multiple PAC Display seats, multiple protocols, multiple networks, or legacy hardware support.

PAC Project Professional can be purchased as a suite or as individual applications to suit your needs. The suite includes the following software applications:

- **PAC Control Professional** for developing control programs
- **PAC Display Professional** for creating HMIs
- **PAC Manager** for configuration
- **OptoOPCServer™**, an OPC 2.0-compliant server for serving SNAP PAC System I/O and variable data to OPC clients, including PAC Display. OptoOPCServer is strongly recommended for multiple seats of PAC Display.
- **OptoDataLink™** for exchanging SNAP PAC System data with databases (including Microsoft SQL Server, Microsoft Access, and MySQL), text files, and email systems
- **EtherNet/IP Configurator** for setting up EtherNet/IP messaging between an Allen-Bradley® Logix™ controller and Opto 22's SNAP PAC I/O

More Information on PAC Project Basic and Pro

Free product support is included with both PAC Project Basic and Professional. Free training and free pre-sales engineering help are also available. For product support, see [“For Help” on page 7](#). For training, see our website under Support > Training or email training@opto22.com. For pre-sales engineering, call 1-800-321-6786 or 1-951-695-3000.

All PAC Project software runs on Microsoft® Windows® XP, Vista, and Windows 7 workstations. See [“Installation Requirements” on page 5](#).

PAC Project works with all SNAP PAC controllers, SNAP PAC brains, SNAP PAC racks, and SNAP I/O modules.

For more information about PAC Project Basic and Professional, see the following documents. The easiest way to find a document on our website, www.opto22.com, is to search on its form number.

- *PAC Project Software Suite Data Sheet*, Opto 22 form 1699
- *PAC Project Basic and Professional Comparison Chart*, form 1681

Notes for Customers with Older Systems (ioProject and FactoryFloor)

PAC Project is very similar to older Opto 22 software, but there are important things to know **before you install** and use it. If you're moving to the SNAP PAC System from legacy systems, be sure to read these documents first:

- *PAC Project 8.0 Release Notes*, form 1680. See the section, “Notes for ioProject and FactoryFloor Customers.”
- *SNAP PAC System Migration Technical Note*, form 1688
- (FactoryFloor customers only) *FactoryFloor to PAC Project Migration Technical Note*, form 1692

New Features and Enhancements

As described below, PAC Control has a number of new commands, PAC Display has some useful enhancements, and PAC Manager now supports four new modules.

PAC Control

The following new commands have been added to PAC Control:

- **HTTP Get** allows you send a request that retrieves a web page.
- **HTTP Post from String Table** posts simple form-type HTTP content stored in the strategy as a string table. This allows you to send values for fields on a webpage and return a webpage with the fields filled in.

- **HTTP Post Calculate Content Length** calculates the length in characters of HTTP content stored in a string table. When sending a POST, you tell the server the total length of the header and body data you're going to send. Using this command the length is automatically calculated and placed in the header table element you specify.
- **Trim String** trims spaces at the ends of a text string. You can use it to trim the beginning or the ending spaces, or both.
- **Get & Restart Timer** retrieves a timer variable and restarts it. This allows more accurate sequential timing. If you do a separate read and start, there could be a task switch between the time you read the timer and the time you restart it resulting in a delay in which no timing would be performed. With this command, the timer is instantly restarted as soon as the current time is retrieved.
- **Get Date & Time** reads the date and time from the control engine's real-time clock/calendar atomically (in a single transaction) and puts each element an integer table. This assures that the date and time are retrieved on the same date. Reading them separately could result in the following situation:

At 11:59:59 PM, the user reads the date; let's say it reads April 1, 2011. Next, the user reads the time; by now, the clock might read 00:00:02. The user now stores the date and time, which reads as April 1, 2011 at 00:00:02. In reality, however, it is April 2, so the timestamp is almost a complete day behind. The same sort of thing can happen if you read the time first; reading atomically (in a single transaction) ensures you get a snapshot of the exact date and time you asked for.
- Using **Send Email** you can create a text-only authenticated email and send it to recipients via SMTP. You can use this command to send emails to keep a user apprised of a system's status, or to warn of exceptional conditions. And there are many other uses.

For example, you could:

 - Have a critical system send hourly status emails; if no email arrives after an hour, it means something is wrong.
 - Send an email in case of an alarm condition.
 - Send a daily status report.
- The **Send Email with Attachments** command is similar to Send Email, except that along with the text you can attach one or more files such as status reports, images, and so on. An example use might be to send a data log file along with the email.

PAC Display Configurator

Both the professional and basic versions of PAC Display Configurator have been enhanced as follows:

- A Clear Send Dialog Input Fields option has been added to the Security tab of the Runtime dialog box. When selected, previous Send Value and Send String values on subsequent appearances of the Send Value and Send String dialog boxes are not shown.

- The Tools > AutoCorrect Tags command now searches tags within grouped graphic objects.
- Table column widths are now saved and restored in Configurator and Runtime.
- The ComboBox Dynamic Attribute dialog box now has Move Up and Move Down buttons to move items up or down in the list.

PAC Display Runtime

Both the basic and professional versions of PAC Display Runtime have been enhanced such that if an alarm point has persistence configured and the point goes into and out of alarm state before the persistence time expires, Runtime no longer logs the return to Normal state.

PAC Manager

Support for the G4EB2 brain as well as the following modules has been added to PAC Manager:

- SNAP-AITM-4i
- SNAP-AIRTD-1K

Also, the default scaling for the SNAP-AIPM-3 and SNAP-AIPM-3V modules has been changed.

Bug Fixes

Many bug fixes have been made in the 9.1 version of PAC Project. For a complete list, see the PAC Project Readme file or the Readme file for individual products (PAC Control, PAC Display, and so on).

In addition, see the Readme file for your control engine or brain firmware, available on our website at www.opto22.com. To find firmware, click Support > Downloads > Firmware.

Here are some other useful sources of bug information on our website:

- **OptoKB Article Search**—Click the Support tab on our website and then click OptoKnowledgeBase to find articles by Article No, Title, Text, or Product.
- **OptoSubscriptions**—Use your my.opto22.com account to subscribe to updates on the Knowledgebase, products, downloads, and documents.

Installation

CAUTION: If you are upgrading to version 9.1 from a version of ioProject older than 7.0, do NOT uninstall ioProject before running the PAC Project version 9.1 installation. If you uninstall first, you will lose all configured control engines.

Installation Requirements

Here's what you need to install and run PAC Project 9.1 software:

- A computer with at least the minimum processor and memory required for your version of Microsoft Windows, and Ethernet capability. Additional memory may be required for some configurations.
- VGA or higher resolution monitor (Super VGA recommended). Minimum size: 800x600 with small fonts.
- Mouse or other pointing device
- Installed Windows printer (optional)
- Microsoft Windows 7 Professional (32-bit or 64-bit), Windows Vista[®] Business (32-bit), or Windows XP Professional (32-bit, with Service Pack 2 or higher)

NOTE: Microsoft Windows server and embedded Windows operating systems are not supported.

- Available hard disk space as shown in the following table:

Application	PAC Project Professional	PAC Project Basic
PAC Control	64.1 MB	63.2 MB
PAC Display	87.8 MB	82.6 MB
OptoOPCServer	16.5 MB	(not included)
OptoDataLink	8.9 MB	(not included)
PAC Manager	26.7 MB	26.8 MB
PAC Utilities	9.4 MB	9.4 MB
EtherNet/IP Configurator	13.0	13.0
Total	223.0 MB*	195.0 MB*

* Installing both Pro and Basic requires a total of 240.7 MB of hard disk space.

Important Note for Windows XP Users

Due to a Microsoft bug involving how Themes are handled in Windows XP (either with Service Pack 2 or with no Service Pack), a resource leak may eventually cause PAC Project applications to crash.

To resolve this problem, install Windows XP Service Pack 3. Or, you can set the Windows XP Desktop Theme to Windows Classic. See Opto 22 [KB49838](#) for details. [KB49838](#) is a

OptoKnowledgeBase article on our website. Either click on the link here or search in the OptoKnowledgeBase on the article number, KB49838, including the KB without any spaces.

Important Notes on Firmware

Use version R9.1b or newer firmware for your SNAP PAC controller whether or not your system uses controller-level redundancy. Previously, there was one version of firmware for systems with controller-level redundancy and another version for systems without redundancy.

Firmware 9.1 is available from our website. To find new firmware, go to www.opto22.com. Click the Support tab, click Downloads, filter by Firmware, and enter the part number for your controller or brain in the search field. Look for "9.1" in the firmware filename, and choose the firmware file for your hardware. Opto 22 hardware is shipped with the most recent firmware, but you should check the website for additional updates that may be available.

For details on the features each firmware version includes, see the firmware README file for your device. To find the Readme, go to www.opto22.com and search on the PAC's or brain's part number. When you get to the product page, look under the Documents tab for the Readme. The Readme can also be found under Related Documents on the firmware download page.

NOTE: If you are using a SNAP-LCE or Ultimate controller, do not upgrade to PAC Project 9.1. Instead, use either PAC Project 8.0 or ioProject. In order to use these controllers with PAC Project 8.0, use controller firmware version 7.2 and Ethernet brain firmware version 7.0 or newer. If you want to use PAC Project software version 8.1 or newer, you must use SNAP-PAC controllers instead.

For additional compatibility information, see form 1693, the Legacy and Current Product Comparison and Compatibility Charts. To obtain this form, go to the Opto 22 website, www.opto22.com, and search on the form number, 1693.

New PAC Project Examples Location

In order to be in compliance with Microsoft's rules regarding directory structure, there is a new location on your hard drive for all of the examples that Opto 22 provides for PAC Project applications:

- For Windows 7 or Vista, go to
C:\Users\Public\Public Documents\Opto 22\PAC Project 9.1
- For Windows XP, go to C:\Documents and Settings\All Users\Shared Documents\Opto 22\PAC Project 9.1

For Help

If you have any difficulty using software, documents, or firmware, contact Opto 22 Product Support by email or phone:

Phone:	800-TEK-OPTO (835-6786) 951-695-3080 (Hours are Monday through Friday, 7 a.m. to 5 p.m. Pacific Time)	<i>NOTE: Email messages and phone calls to Opto 22 Product Support are grouped together and answered in the order received.</i>
Fax:	951-695-3017	
Email:	support@opto22.com	
Opto 22 website:	www.opto22.com	

In addition, the OptoKnowledgeBase (OptoKB) provides the latest information on support issues and workarounds. Visit www.opto22.com and click on the Support tab for more information.

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Checking for Updates Manually

To manually check for new releases or patches for your Opto 22 software, firmware, or documentation, go to the Support > Downloads section of the Opto 22 website.